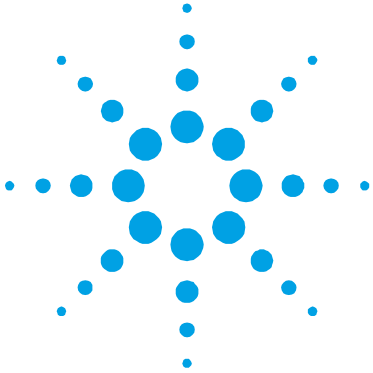

# MiniVac Controller

**Models**
**929-0190, 929-0290, 929-0191, 929-0291**

## Manuale di Istruzioni
## Bedienungshandbuch
## Notice de mode d'Emploi
## User Manual

**87-900-049-01 (H)**
**01/2012**

**Agilent Technologies**

# Notices

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**CAUTION**

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**WARNING**

**A WARNING notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in personal injury or death. Do not proceed beyond a WARNING notice until the indicated conditions are fully understood and met.**

# MiniVac Controller

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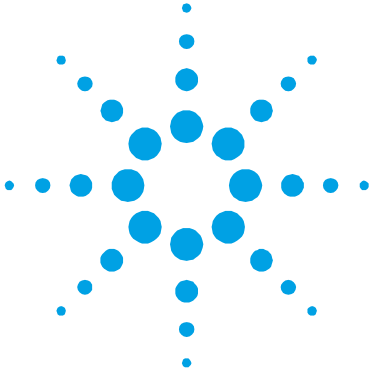

# 1 Istruzioni per l'uso

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Traduzione delle istruzioni originali

# Informazioni generali

Questa apparecchiatura è destinata ad uso professionale. L'utilizzatore deve leggere attentamente il presente manuale di istruzioni ed ogni altra informazione addizionale fornita dalla Agilent prima dell'utilizzo dell'apparecchiatura. La Agilent si ritiene sollevata da eventuali responsabilità dovute all'inosservanza totale o parziale delle istruzioni, ad uso improprio da parte di personale non addestrato, ad interventi non autorizzati o ad uso contrario alle normative nazionali specifiche. Il MiniVac è un alimentatore ad alta tensione e bassa potenza, utilizzato per alimentare le pompe Ioniche.

Nei paragrafi seguenti sono riportate tutte le informazioni necessarie a garantire la sicurezza dell'operatore durante l'utilizzo dell'apparecchiatura. Informazioni dettagliate sono fornite nella sezione "Technical Information".

**Questo manuale utilizza le seguenti convenzioni:**

**ATTENZIONE!** I messaggi di attenzione sono visualizzati prima di procedure che, se non osservate, potrebbero causare danni all'apparecchiatura.

**AVVERTENZA!** **I messaggi di avvertenza attirano l'attenzione dell'operatore su una procedura o una pratica specifica che, se non eseguita in modo corretto, potrebbe provocare gravi lesioni personali.**

**NOTA** Le note contengono informazioni importanti estrapolate dal testo.

# Immagazzinamento

Durante il trasporto e l'immagazzinamento dei MiniVac devono essere soddisfatte le seguenti condizioni ambientali:

- temperatura: da -20 °C a +70 °C
- umidità relativa: 0 – 95 % (non condensante)

# Preparazione per l'installazione

Il controller viene fornito in un imballo protettivo speciale; se si presentano segni di danni, che potrebbero essersi verificati durante il trasporto, contattare l'ufficio vendite locale.

Durante l'operazione di disimballo, prestare particolare attenzione a non lasciar cadere il modulo e a non sottoporlo ad urti.

Non disperdere l'imballo nell'ambiente. Il materiale è completamente riciclabile e risponde alla direttiva CEE 85/399 per la tutela dell'ambiente.

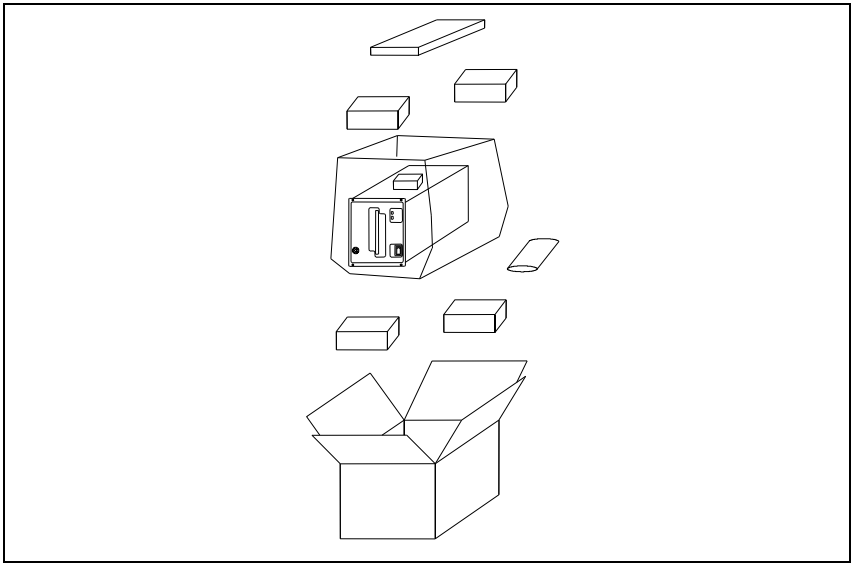


**Figura 1** Imballo dei controller

Ogni controller giunge dalla Agilent predisposto per una certa tensione di alimentazione:

- il modello 929-0190 KINGS type High voltage connector (120 Vac, 50 – 60 Hz)
- il modello 929-0191 FISCHER type High voltage connector (120 Vac, 50 – 60 Hz)
- il modello 929-0290 FISCHER type High voltage connector (220 Vac, 50 – 60 Hz)
- il modello 929-0291 KINGS type High voltage connector (220 Vac, 50 – 60 Hz)

# Installazione

**AVVERTENZA!**

**Il controller è fornito di un cavo di alimentazione a tre fili con una spina di tipo approvato a livello internazionale. Utilizzare sempre questo cavo di alimentazione ed inserire la spina in una presa con un adeguato collegamento di massa onde evitare scariche elettriche.**

**All'interno del controller si sviluppano alte tensioni che possono recare gravi danni o la morte. Prima di eseguire qualsiasi operazione di installazione o manutenzione del controller scollegarlo dalla presa di alimentazione.**

**NOTA** Il controller deve essere installato all'interno di un apposito rack. In ogni caso occorre che l'aria di raffreddamento possa circolare liberamente intorno all'apparato. Non installare e/o utilizzare il controller in ambienti esposti ad agenti atmosferici (pioggia, gelo, neve), polveri, gas aggressivi, in ambienti esplosivi o con elevato rischio di incendio.

Durante il funzionamento è necessario che siano rispettate le seguenti condizioni ambientali:

- temperatura: da 0 °C a +45 °C
- umidità relativa: 0 – 95 % (non condensante).

Per il collegamento del controller con la relativa pompa utilizzare il cavo specifico del controller stesso.

Per gli altri collegamenti e l'installazione degli accessori opzionali, vedere la sezione "Technical Information".

# Uso

In questo paragrafo sono riportate le principali procedure operative. Per ulteriori dettagli e per procedure che coinvolgono collegamenti o particolari opzionali, fare riferimento al paragrafo "Use" della sezione "Technical Information".

Prima di usare il controller effettuare tutti i collegamenti elettrici e pneumatici e fare riferimento al manuale della pompa collegata.

## Comandi, Indicatori e Connettori del Controller

Di seguito sono illustrati sia il pannello frontale che quello posteriore con le interconnessioni.

Per maggiori dettagli fare riferimento alla sezione "Technical Information".

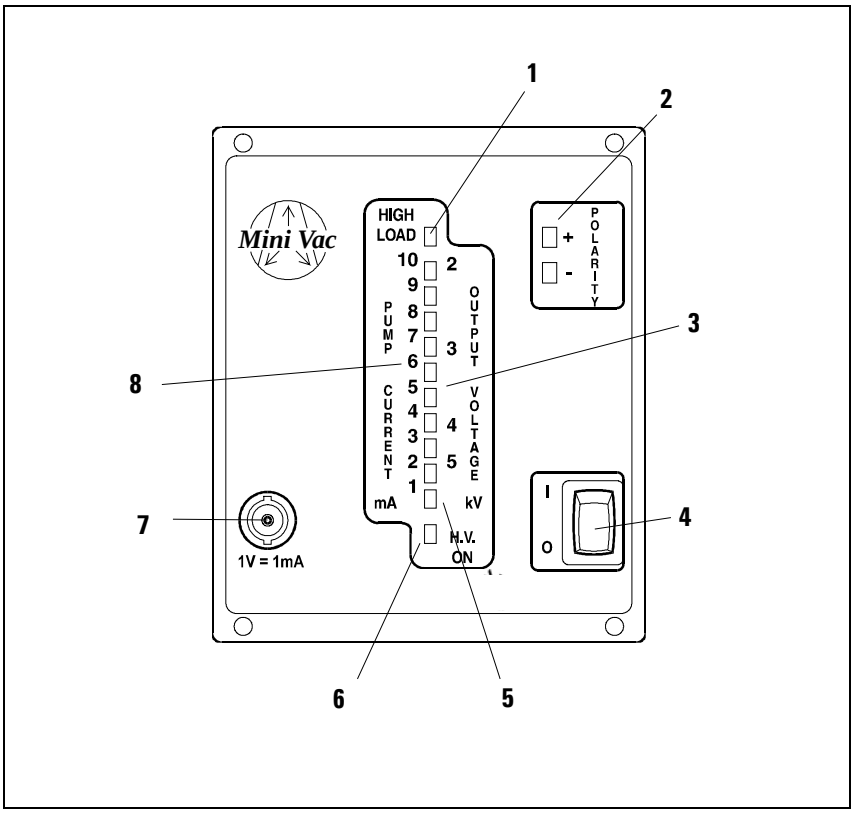



**Figura 2** Pannello frontale del Controller

| | |
|---|---|
| 1 | Led High Load, si accende quando la corrente assorbita dalla pompa raggiunge il valore di 12 mA |
| 2 | LED polarità selezionata in uscita |
| 3 | Scala tensione in uscita (KV) |
| 4 | Interruttore ON/OFF principale |
| 5 | Scala grafica a LED Tensione/Corrente |
| 6 | LED H. V. ON |
| 7 | Connettore di uscita segnale proporzionale alla corrente 1 V= 1 mA log |
| 8 | Scala in corrente (mA) |

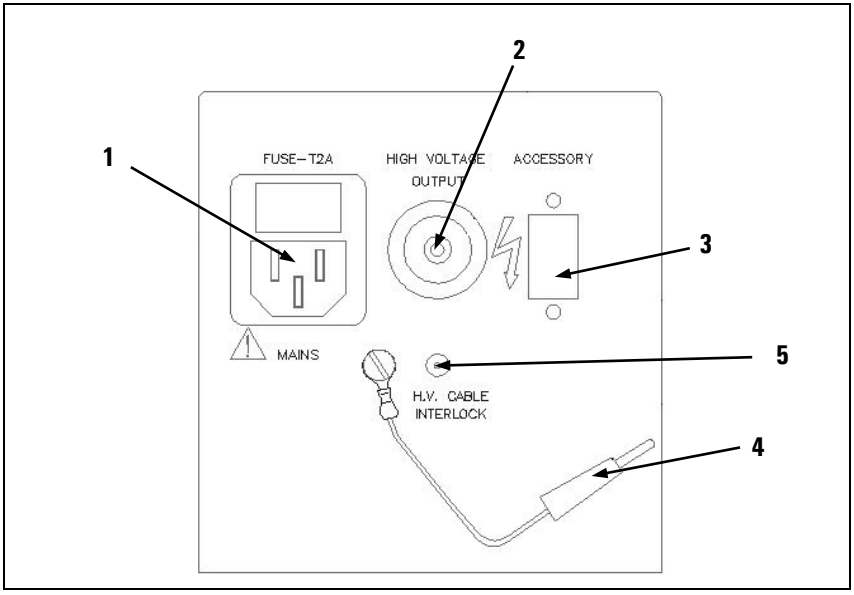



**Figura 3** Pannello posteriore dei Controller

| | |
|---|---|
| 1 | Modulo di ingresso dell'alimentazione per il Controller. Comprende il fusibile di protezione, il cambia-tensione, la presa di alimentazione di potenza ed il filtro EMC (non compreso nel blocco presa/cambia-tensione). |
| 2 | Connettore di uscita alta tensione per alimentazione pompa (tipo KINGS O FISCHER). |
| 3 | Connettore di ingresso/uscita segnali per accessori. |
| 4 | Controller cable Interlock. |
| 5 | Plug Interlock. |

**NOTA** L'unità è provvista di un selettore per la Tensione di Linea. Fare riferimento al paragrafo "INSTALLATION" della sezione "TECHNICAL INFORMATION" per i dettagli dell'operazione di selezione della Tensione di Linea.

# Procedure di uso

## Interlock

L'Interlock è un dispositivo di sicurezza progettato dalla Agilent per proteggere l'operatore dai gravi danni provocati dall'alta tensione presente sul connettore di alimentazione della pompa.

L'uso del controller è inteso con cavo alta tensione provvisto di Interlock.

Qualora il cliente voglia rinunciare, per applicazioni particolari, al cavo HV con interlock Si rende disponibile il cavo di interlock del controller (4).

## Avvio della pompa

Per far partire la pompa è necessario:

1. Collegare la pompa al controller tramite l'apposito cavo HV.
2. Collegare l'Interlock del cavo HV al plug (5), se il cavo HV è sprovvisto del cavo di interlock collegare il cavo di interlock del controller (4) al plug (5).
3. Accendere il controller.

## Accensione del Controller

Per accendere il controller portare l'interruttore principale in posizione ON dopo aver inserito il cavo di alimentazione nella presa di rete.

## Avvio della Pompa

La pompa si avvia solo se il controller è acceso e la pompa è connessa al connettore di uscita. Per ulteriori informazioni fare riferimento alla sezione “Technical Information”.

## Arresto della Pompa

Per arrestare la pompa portare in posizione OFF l'interruttore principale posizionato sul pannello frontale.

# Manutenzione

I controller della serie MiniVac non richiedono alcuna manutenzione. Qualsiasi intervento deve essere eseguito da personale autorizzato.

In caso di guasto è possibile usufruire del servizio di riparazione Agilent o del "Agilent advance exchange service", che permette di ottenere un controller rigenerato in sostituzione di quello guasto.

**AVVERTENZA!** **Prima di effettuare qualsiasi intervento sul controller scollegare il cavo di alimentazione.**

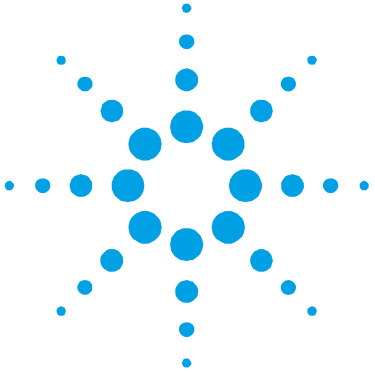
**NOTA** Il connettore di richiusura fornito con l'unità, ha i pin 3 e 7 cortocircuitati (Remote ON/OFF).
Per poter accendere l'HV è necessario montare questo connettore se non è connesso un contatto di Remote Interlock.

**NOTA** L'unità è settata in fabbrica con polarità di uscita negativa. Per un eventuale cambio far riferimento al paragrafo "Output Polarity Selection".

Qualora un controller dovesse essere rottamato, procedere alla sua eliminazione nel rispetto delle normative nazionali specifiche.

# Smaltimento

**Significato del logo "WEEE" presente sulle etichette.**
Il simbolo qui sotto riportato è applicato in ottemperanza alla direttiva CE denominata "WEEE".
Questo simbolo **(valido solo per i paesi della Comunità Europea)** indica che il prodotto sul quale è applicato, NON deve essere smaltito insieme ai comuni rifiuti domestici o industriali, ma deve essere avviato ad un sistema di raccolta differenziata. Si invita pertanto l'utente finale a contattare il fornitore del dispositivo, sia esso la casa madre o un rivenditore, per avviare il processo di raccolta e smaltimento, dopo opportuna verifica dei termini e condizioni contrattuali di vendita.



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Übersetzung der Originalanleitungen

# Allgemeines

Dieser Apparat ist für Fachbetriebe bestimmt. Vor Gebrauch sollte der Benutzer dieses Handbuch sowie alle weiteren mitgelieferten Zusatzdokumentationen genau lesen. Bei - auch nur teilweiser - Nichtbeachtung der enthaltenen Hinweise, unsachgemäßem Gebrauch durch ungeschultes Personal, nicht autorisierten Eingriffen und Mißachtung der einheimischen, hier zur Geltung kommenden Bestimmungen übernimmt die Firma Agilent keinerlei Haftung. Der MiniVac ist ein Hochspannungsnetzgerät niedriger Leistung, das zur Versorgung von Ionenpumpen verwendet wird.

In den folgenden Abschnitten sind alle erforderlichen Informationen für die Sicherheit des Bedieners bei der Anwendung des Geräts aufgeführt. Detaillierte technische Informationen sind im Anhang "Technical Information" enthalten.

**In dieser Gebrauchsanleitung werden Sicherheitshinweise folgendermaßen hervorgehoben:**

**VORSICHT!** Die Vorsichtshinweise vor bestimmten Prozeduren machen den Bediener darauf aufmerksam, daß bei Nichteinhaltung Schäden an der Anlage entstehen können.

**WARNUNG!**

**Die Warnhinweise lenken die Aufmerksamkeit des Bedieners auf eine bestimmte Prozedur oder Praktik, die bei unkorrekter Ausführung schwere Verletzungen hervorrufen können.**

**HINWEIS** Die Hinweise enthalten wichtige Informationen, die aus dem Text hervorgehoben werden.

# Lagerung

Beim Transport und bei der Lagerung der Controller müssen folgende klimatische Verhältnisse eingehalten werden:

- Temperatur: von -20 °C bis +70 °C
- Relative Luftfeuchtigkeit: 0-95 % (nicht kondensierend)

# Vor der Installation

Der Controller wird mit einer speziellen Schutzverpackung geliefert. Eventuelle Transportschäden müssen der zuständigen örtlichen Verkaufsstelle gemeldet werden. Beim Auspacken vorsichtig vorgehen, damit der Controller nicht fällt oder Stößen ausgesetzt wird.

Das Verpackungsmaterial muß korrekt entsorgt werden. Es ist vollständig recyclebar und entspricht der EG-Richtlinie 85/399 für Umweltschutz.

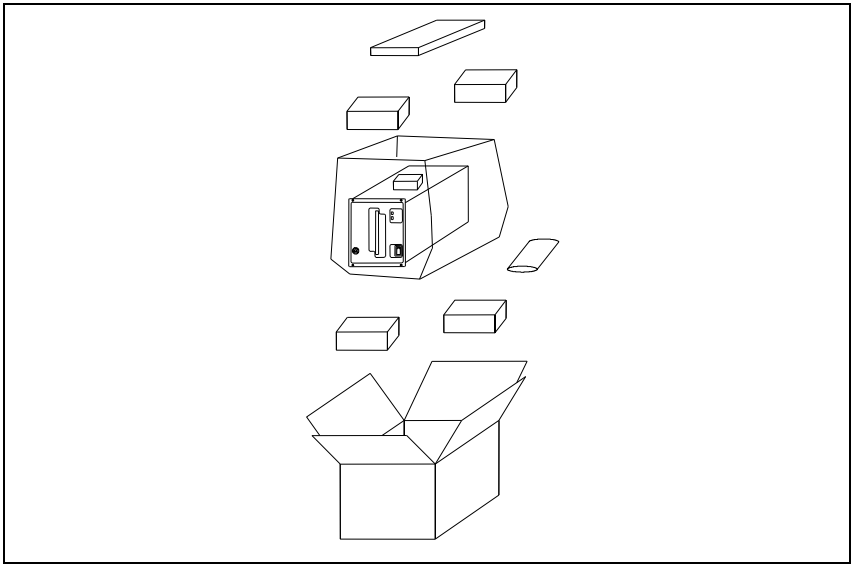


**Abbildung 1** Verpackung der Controller

Alle Agilent-Controller sind für eine bestimmte Anschlußspannung ausgelegt:

- das Modell 929-0190 KINGS type High voltage connector (120 Vac, 50 – 60 Hz)
- das Modell 929-0191 FISCHER type High voltage connector (120 Vac, 50 – 60 Hz)
- das Modell 929-0290 FISCHER type High voltage connector (220 Vac, 50 – 60 Hz)
- das Modell 929-0291 KINGS type High voltage connector (220 Vac, 50 – 60 Hz)

# Installation

**WARNUNG!**

**Der Controller wird mit einem 3-adrigen Netzkabel geliefert, das mit einem den internationalen Normen entsprechenden Stecker ausgerüstet ist. Es sollte immer dieses Netzkabel benutzt werden, das an eine korrekt geerdete Steckdose anzuschließen ist, um Stromentladungen zu vermeiden.**
**Im Inneren des Controllers entstehen hohe Spannungen, die schwere Schäden verursachen und lebensgefährlich sein können. Vor jedem Montage- bzw. Wartungseingriff muß deshalb der Netzstecker gezogen werden.**

**HINWEIS**

Der Controller kann auf einen Tisch oder ein Gestell montiert werden. In beiden Fällen muß auf die ungehinderte Zirkulation der Kühlluft im Bereich des Geräts geachtet werden.
Der Controller darf nicht in Umgebungen installiert u/o benutzt werden, die Witterungseinflüssen (Regen, Frost, Schnee), Staub und aggressiven Gasen ausgesetzt sind und in denen Explosions- und erhöhte Brandgefahr besteht.

Beim Betrieb müssen folgende Umgebungs-bedingungen eingehalten werden:

- Temperatur: von +0 °C bis +45 °C
- Relative Luftfeuchtigkeit: 0 - 95 % (nicht kondensierend).

Für den Anschluß des Controllers an die Pumpe muß das zum Controller gehörende Kabel benutzt werden.

Andere Anschlüsse und die Installation optionalen Zubehörs ist im Abschnitt “Technical Information” beschrieben.

# Gebrauch

In diesem Kapitel sind die wichtigsten Betriebsvorgänge aufgeführt. Für weitere Hinweise bezüglich Anschlüsse und Montage des bestellbaren Zubehörs siehe Kapitel "Use" im Anhang zu "Technical Information".

Vor Benutzung des Controllers sämtliche elektrischen und pneumatischen Anschlüsse ausführen, und die Betriebsanleitung der angeschlossenen Pumpe durchlesen.

## Steuerungen, Anzeigen und Anschlüsse des Controllers

Nachstehend werden dass Bedienfeld des Controllers sowie die Anschlußfelder beschrieben.

Für weitere Einzelheiten siehe "Technical Information".

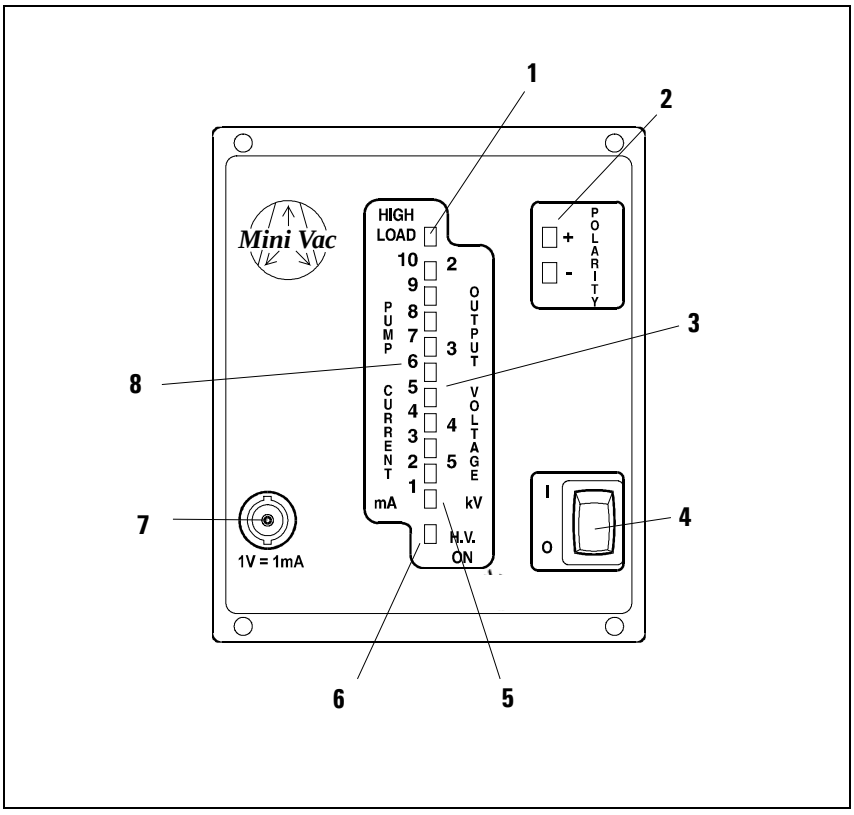



**Abbildung 2** Bedienfeld der Controller

| | |
|---|---|
| 1 | LED Hochlast: geht an, wenn der von der Pumpe absorbierte Strom 12 mA erreicht |
| 2 | LED: im Ausgang gewählte Polung |
| 3 | Skala Ausgangsspannung (kV) |
| 4 | Hauptschalter ON/OFF |
| 5 | grafische Skala zur LED Spannung/Strom |
| 6 | LED H. V. AN |
| 7 | Ausgangsstecker für Strom-proportionales Signal 1 V = 1 mA log |
| 8 | Stromskala (mA) |

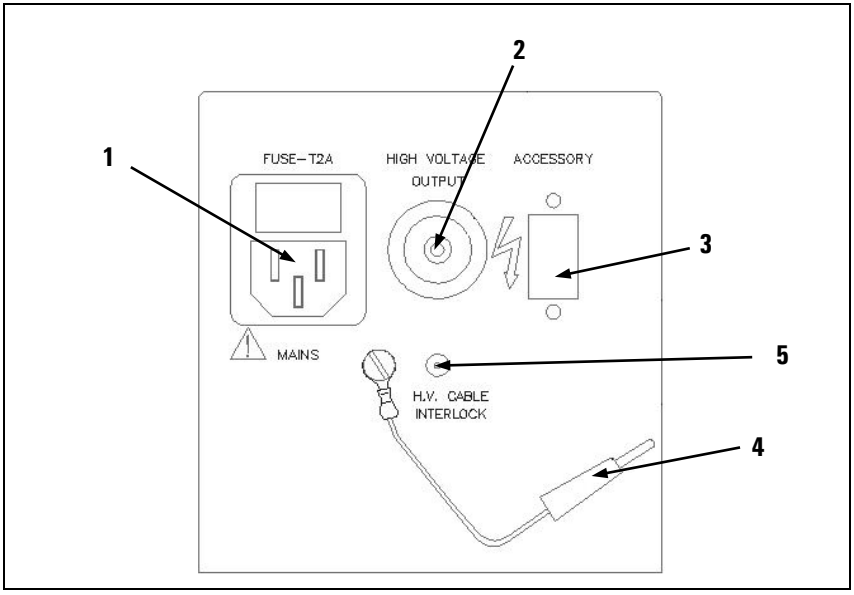



**Abbildung 3** Rücktafel der Controller

| | |
|---|---|
| 1 | Eingangsmodul der Controller-Stromversorgung mit Sicherung, Spannungswahlschalter, Leistungsstecker und EMC-Filter (nicht im Block Stecker/Spannungswahlschalter eingeschlossen). |
| 2 | Hochspannungs-Ausgangsstecker zur Pumpenversorgung (Typ KINGS oder FISCHER). |
| 3 | Eingangs-/Ausgangsstecker für Signale für Zubehör. |
| 4 | Controller-Interlock-Kabel. |
| 5 | Interlock-Stecker. |

**HINWEIS** Die Einheit ist mit einem Wählschalter für die Leitungsspannung versehen. Für ausführliche Informationen zur Auswahl der Leitungsspannung siehe Abschnitt "INSTALLATION" im Teil "TECHNICAL INFORMATION".

# Bedienung

## Interlock

Interlock ist eine von Agilent entworfene Sicherheits-vorrichtung, um den Bediener vor schweren Schäden zu schützen, die durch die Hochspannung am Stromversorgungsstecker der Pumpe hervorgerufen werden können.

Der Controller muss mit dem Hochspannungskabel mit Interlock zum Einsatz kommen.

Falls der Auftraggeber bei besonderen Verwendungen auf das Hochspannungskabel mit Interlock verzichten wollen sollte, kann das Interlock-Kabel des Controllers (4) verwendet werden.

## Inbetriebnahme der Pumpe

Um die Pumpe zu starten, müssen vorher folgende Schritte durchgeführt werden:

1. Mit Hilfe des dafür vorgesehenen Hochspannungs-kabels die Pumpe an den Controller anschließen
2. Interlock des Hochspannungskabels mit dem Stecker (5) verbinden, falls das Hochspannungs-kabel keinen Interlock haben sollte, das Interlock-Kabel des Controllers (4) mit dem Stecker (5) verbinden.
3. Controller einschalten.

## Einschalten des Controllers

Zum Einschalten des Controllers genügt es, das Netzkabel an die Steckdose anzuschließen.

## Pumpenstart

Die Pumpe startet nur, wenn der Controller eingeschaltet und die Pumpe am Ausgangsstecker angeschlossen ist. Weitere Informationen finden sich im Abschnitt “Technical Information”.

## Pumpenstopp

Zum Stoppen der Pumpe muß der Hauptschalter auf dem Bedienfeld auf OFF gesetzt werden.

# Wartung

Die Controller der MiniVac Serie brauchen keinerlei Wartung. Alle Eingriffe dürfen nur von autorisiertem Personal vorgenommen werden.

Bei Defekten kann der Reparatur Service von Agilent oder der "Agilent Advance Exchange Service" in Anspruch genommen werden, der den defekten Controller durch ein Austauschgerät ersetzt.

**WARNUNG!** **Vor jedem Eingriff am Controller muß der Netzstecker gezogen werden.**

**HINWEIS** Bei dem mit der Einheit gelieferte Abschluss-Stecker sind die Stifte 3 und 7 kurzgeschlossen (Remote ON/OFF).

Falls kein Remote Interlock Kontakt angeschlossen ist, kann die Hochspannung nur angeschaltet werden, wenn dieser Stecker montiert ist.

**HINWEIS** Fabrikseitig ist die Einheit mit negativer Ausgangspolung eingestellt. Soll das geändert werden, den Absatz “Output Polarity Selection” zu Rate ziehen.

Eine eventuelle Verschrottung muß unter Einhaltung der einschlägigen landesüblichen Vorschriften erfolgen.

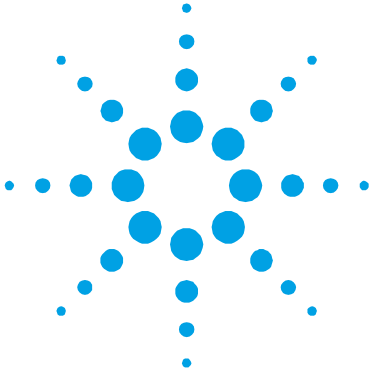
# Entsorgung

**Bedeutung des "WEEE" Logos auf den Etiketten.**

Das folgende Symbol ist in Übereinstimmung mit der EU-Richtlinie WEEE (Waste Electrical and Electronic Equipment) angebracht.

Dieses Symbol **(nur in den EU-Ländern gültig)** zeigt an, dass das betreffende Produkt nicht zusammen mit Haushaltsmüll entsorgt werden darf sondern einem speziellen Sammelsystem zugeführt werden muss.

Der Endabnehmer sollte daher den Lieferanten des Geräts - d.h. die Muttergesellschaft oder den Wiederverkäufer - kontaktieren, um den Entsorgungsprozess zu starten, nachdem er die Verkaufsbedingungen geprüft hat.



# 3 Mode d’emploi

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Traduction de la mode d’emploi originale

# Indications Generales

Cet appareillage a été conçu en vue d'une utilisation professionnelle. L'utilisateur doit lire attentivement cette notice d'instructions ainsi que toute autre indication supplémentaire fournie par Agilent, avant l'utilisation de l'appareil. Agilent décline toute responsabilité quant au: non-respect total ou partiel des instructions pour l'utilisation, mauvais usage par du personnel non formé, opérations non autorisées usage contraire aux réglementations nationales spécifiques.

MiniVac est un alimentateur à haute tension, faible puissance, conçu pour alimenter les pompes ioniques.

Les paragraphes suivants donnent toutes les indications nécessaires pour garantir la sécurité de l'opérateur pendant l'utilisation de l'appareillage. Des renseignements plus détaillés se trouvent dans la section "Technical Information".

**Cette notice utilise les signes conventionnels suivants:**

**ATTENTION!** Les messages d'attention apparaissent avant certaines procédures qui, si elles ne sont pas observées, pourraient endommager sérieusement l'appareillage.

**AVERTISSEMENT!**

**Les messages d'avertissement attirent l'attention de l'opérateur sur une procédure ou une manoeuvre spéciale qui, si elle n'est pas effectuée correctement, risque de provoquer de graves lésions.**

**NOTE** Les notes contiennent des renseignements importants, isolés du texte.

## Emmagasinage

Pendant le transport et l'emmagasinage des Mini Vac contrôleurs, il faudra veiller à respecter les conditions environnementales suivantes:

- Température: de - 20 °C à + 70 °C
- Humidité relative: 0 – 95 % (non condensante).

# Preparation pour l'installation

Le contrôleur est fourni dans un emballage de protection spécial; si vous constatez des marques de dommages pouvant s'être produits pendant le transport, adressez-vous aussitôt au bureau de vente local. Pendant l'opération d'ouverture de l'emballage, veiller tout particulièrement à ne pas laisser tomber le contrôleur et à ne lui faire subir aucun choc. Ne pas jeter l'emballage dans la nature. Le matériel est entièrement recyclable et il est conforme à la directive CEE 83/399 en matière de protection de l'environnement.

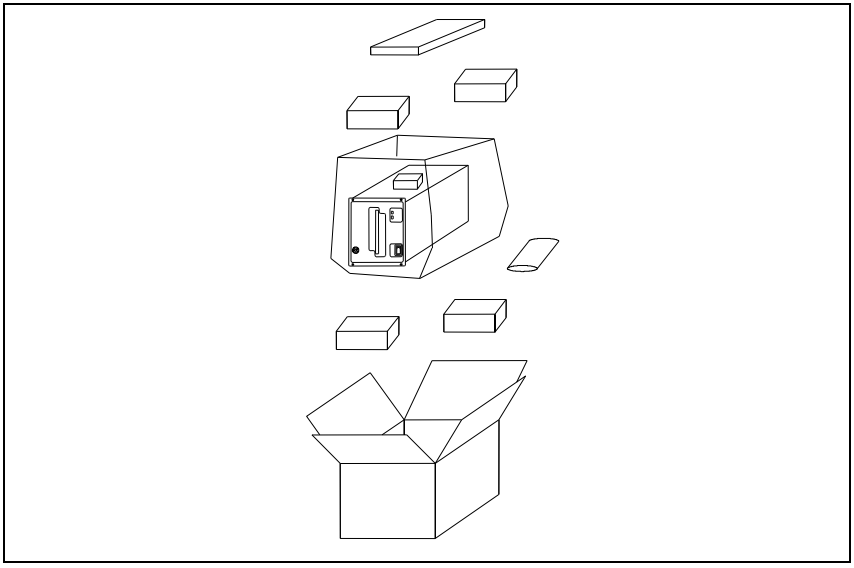


**Figure 1** Emballage des Contrôleurs

Chaque contrôleur est fourni par Agilent prééquipé pour une certaine tension d'alimentation:

- Modèle 929-0190 KINGS type High voltage connector (120 Vac, 50 – 60 Hz)
- Modèle 929-0191 FISCHER type High voltage connector (120 Vac, 50 – 60 Hz)
- Modèle 929-0290 FISCHER type High voltage connector (220 Vac, 50 – 60 Hz)
- Modèle 929-0291 KINGS type High voltage connector (220 Vac, 50 – 60 Hz)

# Installation

**AVERTISSEMENT!**

**Le contrôleur est doté d'un câble d'alimentation à trois fils avec une fiche du type approuvé au niveau international. Utiliser toujours ce câble d'alimentation et introduire la fiche dans une prise pourvue d'un branchement approprié à la masse, afin d'éviter toute décharge électrique. A l'intérieur du contrôleur se développent de hautes tensions qui peuvent provoquer de graves dommages et même la mort. Avant d'effectuer toute opération d'installation ou d'entretien du contrôleur, le débrancher de la prise d'alimentation.**

**NOTE**

Le contrôleur doit être installé dans une baie prévue à cet effet. Il est en tout cas nécessaire que l'air de refroidissement puisse circuler librement à l'intérieur de l'appareil. Ne pas installer et/ou utiliser le contrôleur dans des milieux exposés aux agents atmosphériques (pluie, gel, neige), aux poussières, aux gaz de combat ni dans des milieux explosifs ou à risque élevé d'incendie.

Pendant le fonctionnement, il est nécessaire de respecter les conditions environnementales suivantes:

- Température: 0 °C à + 45 °C
- Humidité relative: 0 – 95 % (non condensante).

Pour la connexion du contrôleur à la pompe correspondante, utiliser le câble du contrôleur prévu à cet effet.

Pour les autres connexions et pour l'installation des accessoires en option, voir la section "Technical Information".

# Utilisation

Ce paragraphe décrit les principales procédures de fonctionnement. Pour tout autre complément d'information et pour les procédures concernant des connexions ou des éléments en option, se reporter au paragraphe "Use" de la section "Technical Information".

Avant d'utiliser le contrôleur, effectuer toutes les connexions électriques et pneumatiques et se référer à la notice de la pompe connectée.

## Commandes, Indicateurs et Connecteurs du Contrôleur

La figure ci-après représente le tableau de commande du Contrôleur et les tableaux d'interconnexion.

Pour de plus amples détails, se reporter à la section "Technical Information".

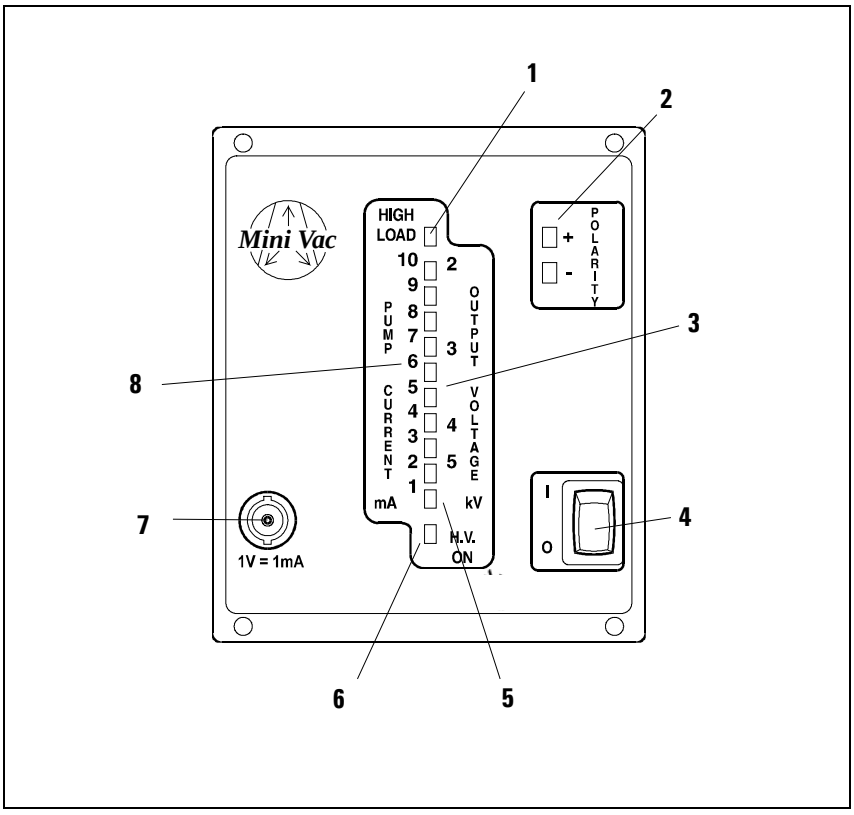



**Figure 2** Tableau avant du Contrôleur

| | |
|---|---|
| 1 | Led High Load, (charge élevée) il clignote quand le courant consommé par la pompe atteint la valeur de 12 mA |
| 2 | LED polarité sélectionnée à la sortie |
| 3 | Echelle de courant à la sortie (KV) |
| 4 | Interrupteur ON/OFF principal |
| 5 | Échelle graphique à LED Tension/Courant |
| 6 | LED H. V. ON |
| 7 | Connecteur de sortie signal proportionné au courant 1 V= 1 mA log |
| 8 | Echelle de courant (mA) |

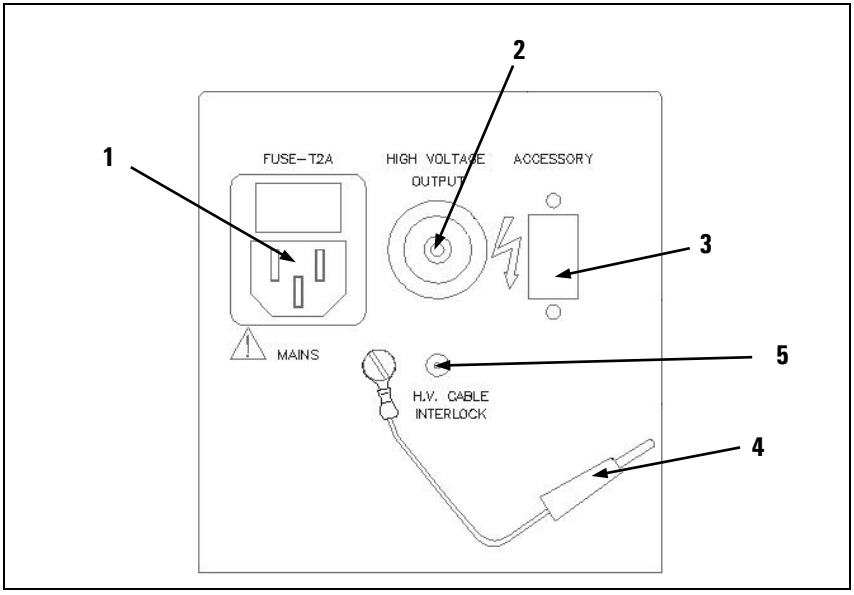



**Figure 3** Tableau arrière des Controleurs

| | |
|---|---|
| 1 | Module d'entrée de l'alimentation du Contrôleur. Il est doté du fusible de protection, du dispositif de changement de tension, de la prise d'alimentation en puissance et du filtre EMC (qui n'est pas compris dans le bloc prise/dispositif de changement de tension). |
| 2 | Connecteur de sortie haute tension pour l'alimentation de la pompe (type KINGS O FISCHER). |
| 3 | Connecteur d'entrée/sortie des signaux pour les accessoires. |
| 4 | Câble Interlock du contrôleur. |
| 5 | Prise Interlock. |

**NOTE** L'unité est dotée d'un sélecteur de tension de ligne. Pour tout détail concernant l'opération de sélection de la tension de ligne, se reporter au paragraphe «INSTALLATION» de la section TECHNICAL INFORMATION.

# Procedures d'utilisation

## Interlock

L'Interlock est un dispositif de sécurité conçu par Agilent pour protéger l'opérateur contre les sérieux dommages provoqués par la présence de haute tension au niveau du connecteur d'alimentation de la pompe.

Il est entendu que le câble de haute tension du contrôleur est équipé de l'Interlock.

Si le client ne souhaite pas utiliser le câble HV avec interlock sur certaines installations, le câble d'interlock du contrôleur (4) est disponible.

## Démarrage de la pompe

Pour mettre la pompe en marche, il faut :

1. Relier la pompe au contrôleur à l'aide du câble HV réservé à cet effet.
2. Brancher l'Interlock du câble HV sur la prise (5) ; si le câble HV n'est pas équipé du câble d'interlock, brancher le câble d'interlock du contrôleur (4) sur la prise (5).
3. Allumer le contrôleur.

## Mise sous tension du Contrôleur

Pour mettre le contrôleur sous tension, il suffit de mettre l'interrupteur principal sur ON après avoir branché le câble d'alimentation sur la prise du réseau.

## Mise en marche de la Pompe

La pompe démarre uniquement si le contrôleur est allumé et la pompe est reliée au connecteur de sortie. Pour d'ultérieurs renseignements se référer à la section “Technical Information”.

## Arrêt de la Pompe

Pour arrêter la pompe, mettre l'interrupteur principal situé sur le tableau avant sur OFF.

# Entretien

Les contrôleurs de la série MiniVac ne requièrent aucun entretien. Toute intervention doit être effectuée par du personnel autorisé.

En cas de panne, il est possible de faire appel au service de réparation Agilent ou au "Agilent advance exchange service", qui permet d'obtenir un contrôler régénéré à la place de celui en panne.

**AVERTISSEMENT!** **Avant d'effectuer toute intervention sur le contrôleur, débrancher le câble d'alimentation.**

**NOTE** Le connecteur de fermeture fourni avec l'unité a les pins 3 et 7 en court circuit (Remote ON/OFF).

Pour pouvoir allumer l'HV il faut monter ce connecteur si un contact de Remote Interlock n'est pas branché.

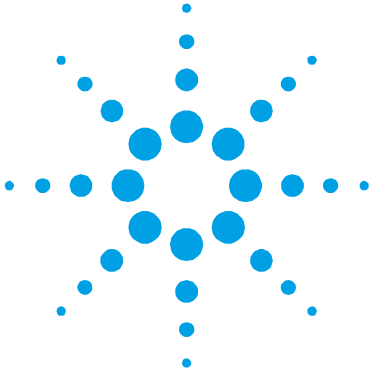
**NOTE** L'unité est assignée à l'usine avec polarité de sortie négative. Pour un changement éventuel, se référer au paragraphe "Output Polarity Selection".

Si un contrôleur doit être mis au rebut l'éliminer conformément aux réglementations nationales en la matière.

# Mise au rebut

**Signification du logo "WEEE" figurant sur les étiquettes.**
Le symbole ci-dessous est appliqué conformément à la directive CE nommée "WEEE".

Ce symbole **(uniquement valide pour les pays de la Communauté européenne)** indique que le produit sur lequel il est appliqué NE doit PAS être mis au rebut avec les ordures ménagères ou les déchets industriels ordinaires, mais passer par un système de collecte sélective.
Après avoir vérifié les termes et conditions du contrat de vente, l'utilisateur final est donc prié de contacter le fournisseur du dispositif, maison mère ou revendeur, pour mettre en œuvre le processus de collecte et mise au rebut.



# 4
# Instructions for Use

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Original Instructions

# General Information

This equipment is destined for use by professionals. The user should read this instruction manual and any other additional information supplied by Agilent before operating the equipment. Agilent will not be held responsible for any events occurring due to non-compliance, even partial, with these instructions, improper use by untrained persons, non-authorised interference with the equipment or any action contrary to that provided for by specific national standards. The MiniVac is a high voltage and low power feeder used to feed the ionic pumps.

The following paragraphs contain all the information necessary to guarantee the safety of the operator when using the equipment. Detailed information is supplied in the section "Technical Information".

**This manual uses the following standard protocol:**

**CAUTION!** The caution messages are displayed before procedures which, if not followed, could cause damage to the equipment.

**WARNING!**

**The warning messages are for attracting the attention of the operator to a particular procedure or practice which, if not followed correctly, could lead to serious injury.**

**NOTE** The notes contain important information taken from the text.

# Storage

When transporting and storing the MiniVacs, the following environmental requirements should be satisfied:

- temperature: from -20 °C to + 70 °C
- relative humidity: 0 – 95 % (without condensation)

# Preparation for Installation

The controller is supplied in a special protective packing. If this shows signs of damage which may have occurred during transport, contact your local sales office. When unpacking, ensure that the module is not dropped or subjected to any form of impact. Do not dispose of the packing materials in an unauthorised manner. The material is 100 % recyclable and complies with EEC Directive 85/399.

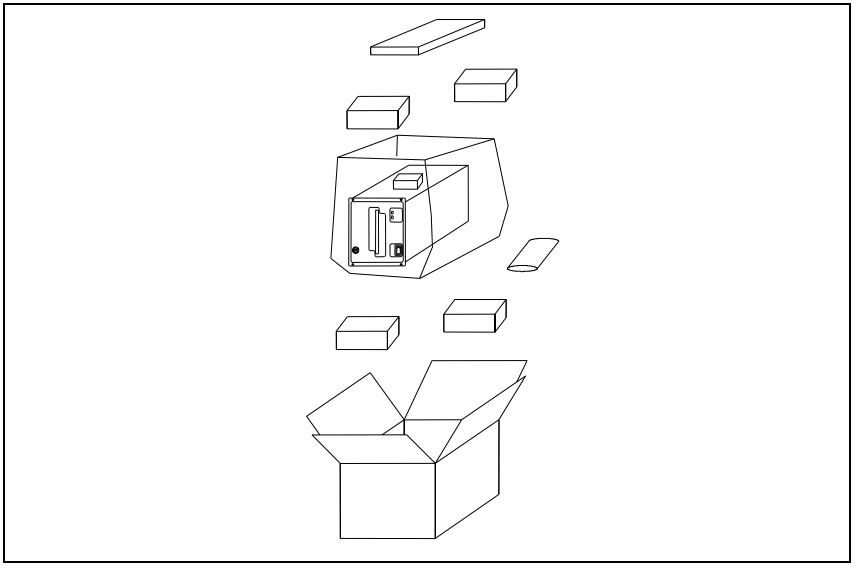


**Figure 1** Controller Packing

Each controller is factory set for a specific power supply:

- Model 929-0190 KINGS type High voltage connector (120 Vac, 50 – 60 Hz)
- Model 929-0191 FISCHER type High voltage connector (120 Vac, 50 – 60 Hz)
- Model 929-0290 FISCHER type High voltage connector (220 Vac, 50 – 60 Hz)
- Model 929-0291 KINGS type High voltage connector (220 Vac, 50 – 60 Hz)

# Installation

**WARNING!**

**The controller is equipped with a 3-wire power cord and plug (internationally approved) for user's safety. Use this power cord and plug in conjunction with a properly grounded power socket to avoid electrical shock.**

**High voltage developed in the controller can cause severe injury or death. Before servicing the unit, disconnect the input power cable.**

**NOTE** The controller must be installed inside a rack module, but it must be positioned so that free air can flow through the holes. Do not install or use the controller in an environment exposed to atmospheric agents (rain, snow, ice), dust, aggressive gases, or in explosive environments or those with a high fire risk.

During operation, the following environmental conditions must be respected:

- temperature: from 0 °C to +45 °C
- relative humidity: 0 – 95 % (without condensation)

To connect the controller to the pump use the specific cable supplied with the controller.

See the section "Technical Information" for detailed information about the above mentioned and the other connections, and about the options installation.

# Use

This paragraph describes the fundamental operating procedures. Detailed information and operating procedures that involve optional connections or options are supplied in the paragraph "USE" of the section "Technical Information".

Make all vacuum manifold and electrical connections and refer to the pump instruction manual prior to operating the controller.

## Controller Controls, Indicators and Connectors

The following paragraph illustrates either the front and rear panel with its interconnections.

More details are contained in the appendix "Technical Information".

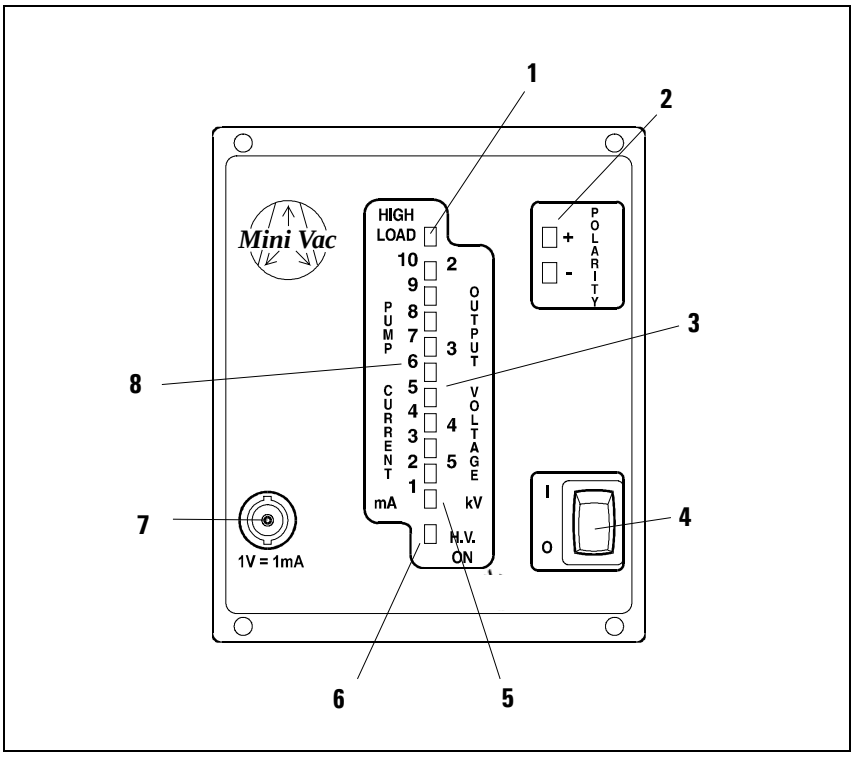



**Figure 2** Controller Front Panel

| | |
|---|---|
| 1 | High Load LED, comes on when the current absorbed by the pump reaches 12 mA |
| 2 | Output selected polarity LED |
| 3 | Output voltage scale (KV) |
| 4 | Main ON/OFF switch |
| 5 | Voltage/current LED scale |
| 6 | H.V. LED ON |
| 7 | Output connector of the sSignal proportional to the current<br>1 V= 1 mA log |
| 8 | Current scale (mA) |

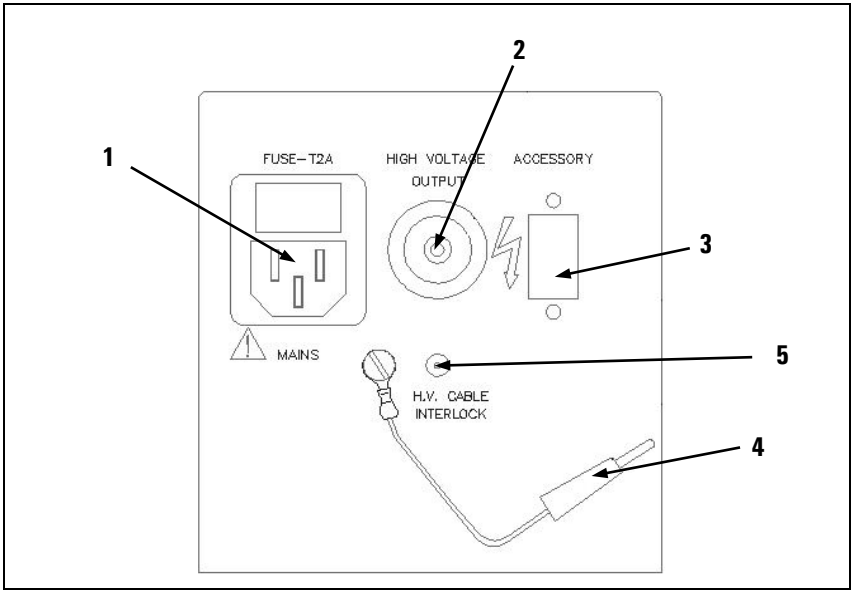



**Figure 3** Controller Rear Panel

| | |
|---|---|
| 1 | Input module for the controller power supply. It includes the protection fuse, the voltage changer, the power supply plug, and the EMC filter (not included into the plug/voltage switch assembly). |
| 2 | High voltage output connector for the pump (KINGS or FISCHER type) power supply. |
| 3 | Input/output signal connector for fittings |
| 4 | Controller cable Interlock. |
| 5 | Plug Interlock. |

**NOTE** The unit is provided with a Line Voltage selector. Refer to the "INSTALLATION" paragraph of "TECHNICAL INFORMATION" section for details about the Line Voltage selection operation.

# Use Procedure

## Interlock

The Interlock is a safety device designed by Agilent to protect the operator against serious injury caused by the high voltage present on the pump power connector.

The controller is intended to be used with a HV cable furnished with Interlock.

If the customer does not wish to use the HV cable with interlock for particular application requirements, the interlock cable of the controller (4) is available.

## Start-Up of the Pump

To start the pump:

1. Connect the pump to the controller using the specific HV cable.
2. Connect the Interlock of the HV cable to the plug (5); if the HV cable is without the interlock cable, connect the interlock cable of the controller (4) to the plug (5).
3. Switch on the controller.

## Controller Start-up

To start-up the controller, turn the main switch to ON, after plugging the power cable into a suitable power source.

## Starting the Pump

The pump is activated only if the controller is powered on and the pump itself is connected to the output connector. For further information refer to the “Technical Information” section.

## Pump Shutdown

To shutdown the pump, turn the main switch placed on the front panel to OFF.

# Maintenance

The MiniVac series controllers do not require any maintenance interventions. Any intervention must be performed by authorised personnel only.

When a fault has occurred it is possible to use the Agilent repair service or the “Agilent advance exchange service”, that allows to obtain a regenerated controller replacing the faulty one.

**WARNING!** **Before carrying out any work on the controller, disconnect it from the supply.**

**NOTE** Pins 3 and 7 on the loopback plug provided with the unit are short circuited (Remote ON/OFF). This loopback plug must be fitted to power on the HV unless a Remote/Interlock contact is connected.

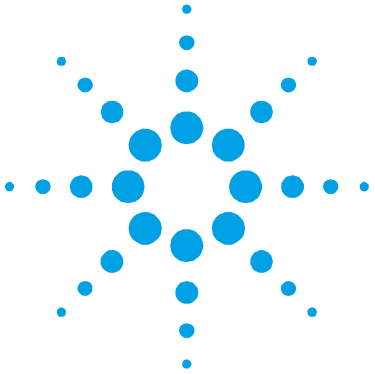
**NOTE** The unit is factory set with a negative output polarity. Refer to the section “Output Polarity Selection” for instructions on how to change the output polarity.

If a pump is to be scrapped, it must be disposed of in accordance with the specific national standards.

# Disposal

**Meaning of the "WEEE" logo found in labels**
The following symbol is applied in accordance with the EC WEEE (Waste Electrical and Electronic Equipment) Directive.
This symbol (**valid only in countries of the European Community**) indicates that the product it applies to must NOT be disposed of together with ordinary domestic or industrial waste but must be sent to a differentiated waste collection system.

The end user is therefore invited to contact the supplier of the device, whether the Parent Company or a retailer, to initiate the collection and disposal process after checking the contractual terms and conditions of sale.



# 5 Technical Information

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Original Instructions

# Minivac Description

The MiniVac controller is a quarter rack solid state power supply with self protection features, which generates high voltage using high frequency switching technology.

The MiniVac ion pump controller is designed to operate any type of ion pumps: Diode, Differential Diode, Triode and StarCell.

The MiniVac controller is a very compact and light unit capable of powering any size of pump at different operating pressure.

Small pumps (up to 8 l/s) can be operated at any pressure up to $1 \times 10^{-3}$ mbar.

Medium pumps (20 l/s to 60 l/s) can be operated at any pressure up to $1 \times 10^{-5}$ mbar/Torr (continuous operation).

Large pumps (120 l/s to 400 l/s) can be operated at any pressure up to $2 \times 10^{-6}$ mbar/Torr (continuous operation).
Medium/larger ion pumps must first be started with an appropriate control unit and pumped to a sufficiently low pressure where the current demand is below 8 mA.

The MiniVac controller is designed to withstand continuous operation at short circuit condition, without any damage to the ion pump or to the controller itself.

The MiniVac controller is available in four versions, which differ in the factory-set input voltage and in the high voltage output connector type.

- Model 929-0190 KINGS type High voltage connector (120 Vac, 50/60 Hz)
- Model 929-0191 FISCHER type High voltage connector (120 Vac, 50/60 Hz)
- Model 929-0290 FISCHER type High voltage connector (220 Vac, 50/60 Hz)
- Model 929-0291 KINGS type High voltage connector (220 Vac, 50/60 Hz)

A voltage change over allows to select different operating voltages.

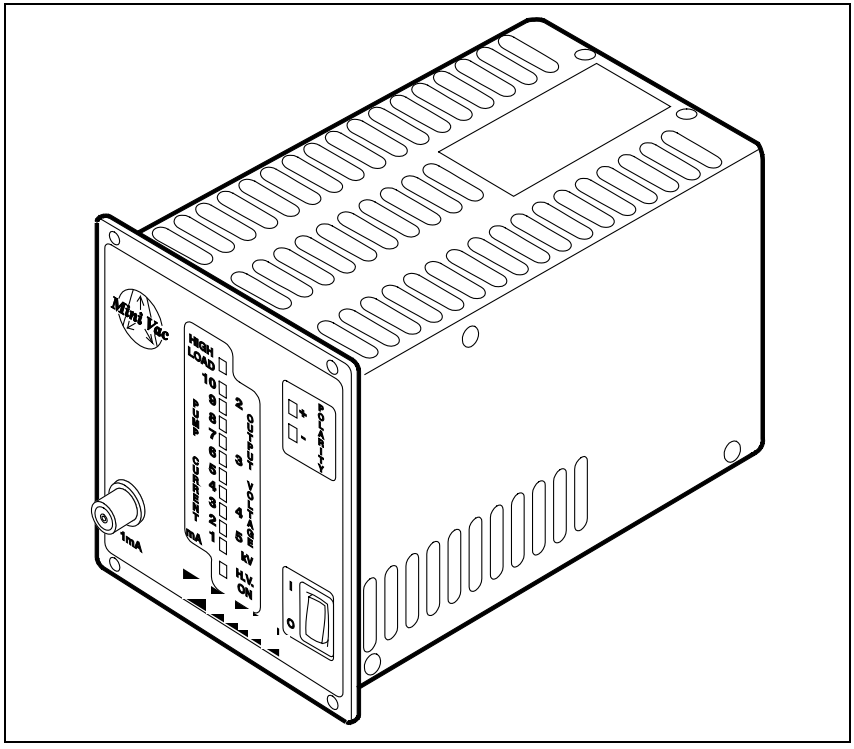


**Figure 4** MiniVac Controllers

The MiniVac controller front panel controls are shown in the following figure.7

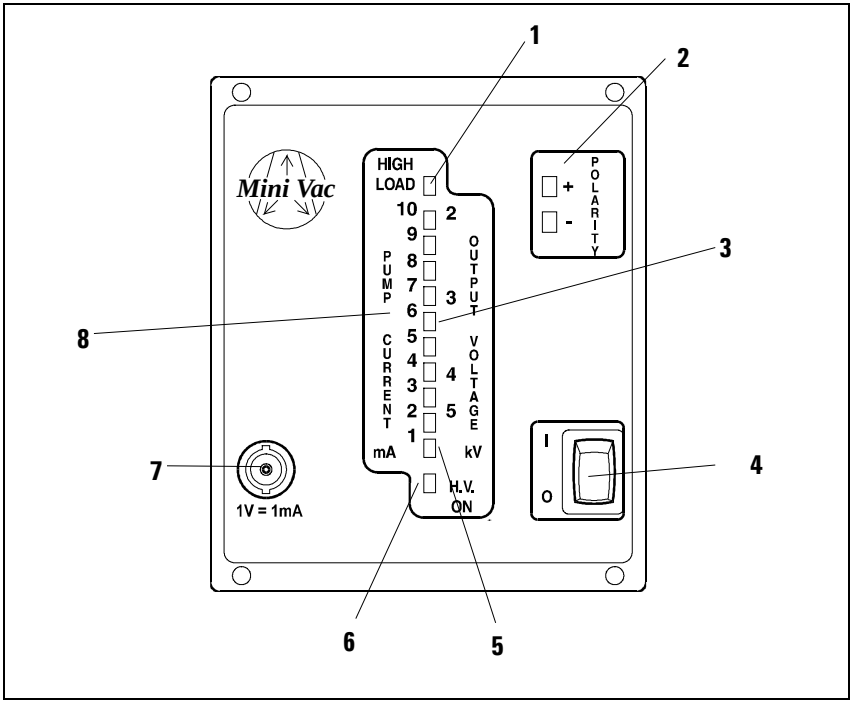


**Figure 5** MiniVac Front Panel Controls

| | |
|---|---|
| 1 | High Load LED lights up when the pump current is higher than 12 mA. |
| 2 | Output polarity LEDs selection indicators. |
| 3 | Voltage output scale (kV). |
| 4 | Controller power ON/OFF switch. |
| 5 | Current/voltage LED's bar graph indicator. |
| 6 | H. V. ON LED. |
| 7 | Recorder output connector. |
| 8 | Pump current scale (mA). |

The MiniVac controller rear panel controls are shown in the following figure.

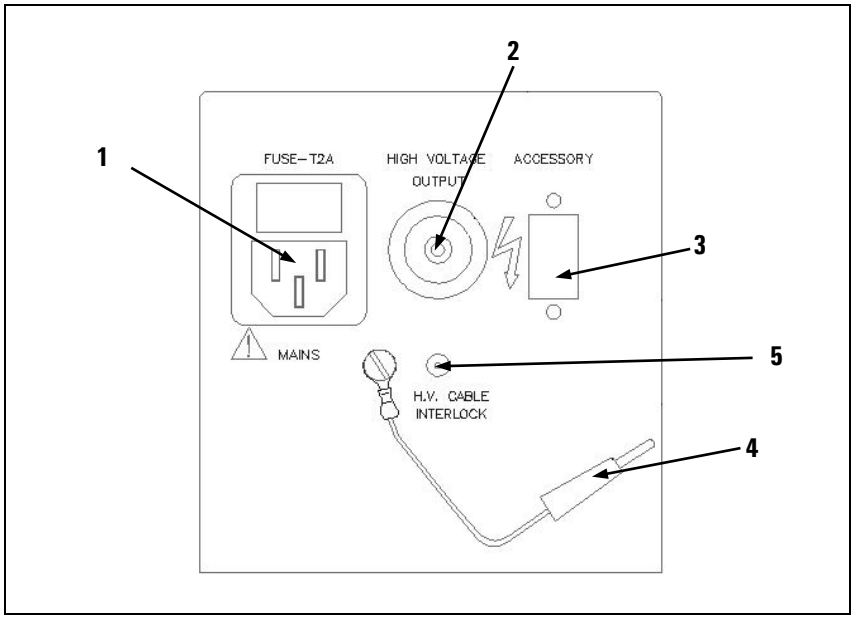


**Figure 6** MiniVac Controller Rear Panel Controls

| | |
|---|---|
| 1 | Input module for the controller power supply. It includes the protection fuse, the voltage changer, the power supply plug, and the EMC filter (not included into the plug/voltage switch assembly). |
| 2 | High voltage output connector for the pump (KINGS or FISCHER type) power supply. |
| 3 | Input/output signal connector for fittings |
| 4 | Controller cable Interlock. |
| 5 | Plug Interlock. |

# Controller Specifications

**Tab. 1**

| Operation | All type and size of Vaclon pump |
|---|---|
| Input: | |
| ▪ Voltage<br>▪ (4 ranges) | 100 Vac<br>120 Vac<br>220 Vac<br>240 Vac |
| ▪ Frequency | 50 to 60 Hz |
| ▪ Power | 50 VA |
| ▪ Fuse | 2 x T 2A (disregarding the mains) |
| Output: | |
| ▪ Voltage | ± 5000 Vdc ± 10 % (refer to the following figure) (polarity through internal card) |
| ▪ Current | 15 mA (short circuit) (refer to the following figure) |
| ▪ Power | 21 W |
| Dual Current Recorder Output: | |
| ▪ Rec Out1 | 0 to 10 Vdc (10 V correspond to 10 mA);<br>resolution of 10 mV minimum (corresponding to 10 µA)<br>Available on front panel BNC connector and at pins 1 and 6 of rear panel Accessory connector. |
| ▪ Rec Out2 | 0 to 10 Vdc (10 V correspond to 1 mA);<br>resolution of 10 mV minimum (corresponding to 1 µA)<br>Available at pins 2 and 6 of rear panel Accessory connector. |
| Voltage Recorder Output: | |
| ▪ Rec Out | 0 to 5 V (corresponding to<br>0 to 5 kV with 1 V corresponding to 1 kV in linear mode)<br>Available at pins 4 and 8 of rear panel Accessory connector. |
| Operating temperature | 0 °C to 45 °C |
| Storage temperature | -20 °C to +70 °C |
| Radio interference suppression | EN 55011 class A Group 1<br>EN 61000-4-2<br>EN 61000-4-4<br>EN 61000-4-3 |

| | |
|---|---|
| Safety | EN 61010-1 |
| Installation category | II |
| Pollution degree | 2 |
| Output connector:<br>▪ High voltage<br><br><br><br>▪ Accessory | FISCHER type:<br>part number 105 A049<br>for model 929-0290 and 929-0191<br>KINGS type:<br>part number 1064-1<br>for model 929-0190 and 929-0291<br>J 001 input/output<br>signal (9-pin "D" type socket) |
| Cable | Mains, 3 meters long |
| Weight | 2.3 Kg 5.06 lbs |

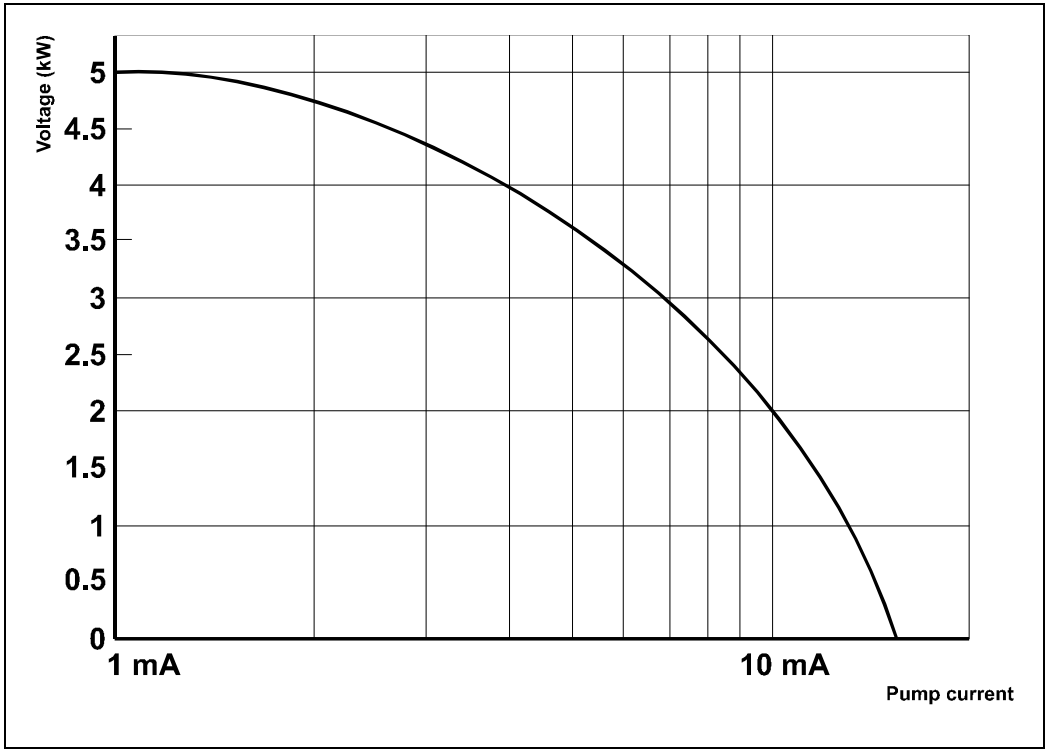


**Figure 7** Voltage Vs Current Diagram

# Controller Outline

The outline dimensions of the MiniVac controller are shown in the following figure.

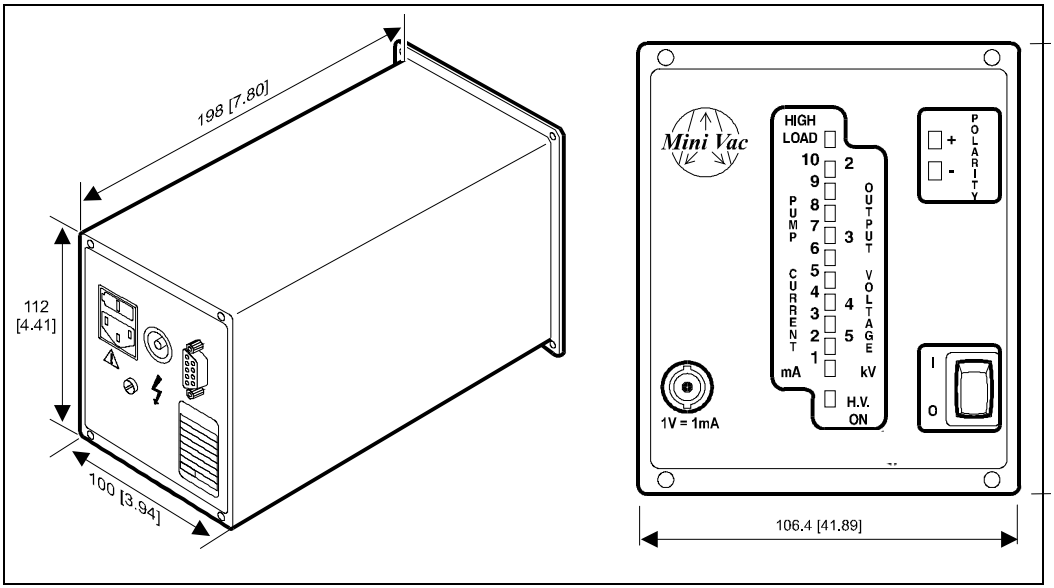


**Figure 8** MiniVac Outline Dimensions

# Installation

Inspect the controller for any shipping damage.

- Models 929-0190 and 929-0191 are factory set for 120 Vac operation
- Models 929-0290 and 929-0291 are factory set for 220 Vac operation.

**WARNING!**

**The MiniVac controller is equipped with a 3-wire power cord and plug (internationally approved) for user's safety. Use this power cord and plug in conjunction with a properly grounded power socket to avoid electrical shock.**
**High voltage developed in the controller can cause severe injury or death. Before servicing the unit, disconnect the input power cable.**

**NOTE** The MiniVac controller can be used as a bench unit or as a rack module, but it must be positioned so that free air can flow through the holes.

## Line Voltage Change Over

If a change in line voltage operation is desired, proceed as follows:

1. Unplug the power cord from the controller rear panel socket.
2. On the power entry module (rear panel), check back door for voltage selector set.
3. Using a small screwdriver, pull out the voltage selector and fuses.
4. Select the operating voltage, then firmly insert the voltage selector and fuses in place.
5. Check voltage selector window for correct set and connect the power cord.
6. For Line Voltage between 200 and 230 Vac set the voltage selector to 220 Vac; for Line Voltage higher than 230 Vac set the voltage selector to 240 Vac.

# Output Polarity Selection

The output polarity is selected by the high voltage multiplier card, and is factory set for negative output voltage polarity.

If a change in output polarity is desired, proceed as follows:

1. Switch off the power and unplug the power cord from the controller rear panel socket.
2. Undo the 9 screws and then remove the cover.
3. Disconnect the H.V. white wire (1) from the multiplier board (see the following figure), remove the board (2) and rotate it 180° horizontally; reinstall the board into the socket and reconnect the H.V. white wire.
4. Install the cover and screws.
5. Connect the power cord then switch on the unit and check on the front panel the output polarity indication.

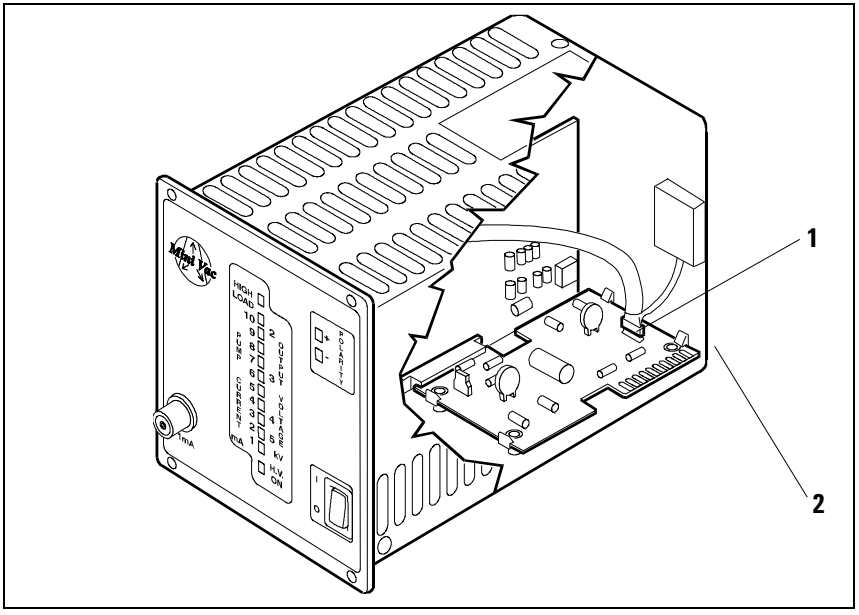


**Figure 9** Output Polarity Selection

# Input/Output Interconnections

All input/output signals are accessible at J001 accessory connector. With the provided P001 mating connector make the connections with AWG 24 (0.2 $mm^2$) - or smaller wire - to the pins indicated in the following figure to obtain the desired capability.

## Input Signals

**Pin 3-7** Remote high voltage ON/OFF or high voltage interlock; requires a permanent closed pin contact.

**NOTE** Pin 3-7 must be shorted to allow the high voltage output if no remote/interlock contact is connected.

## Output Signals

**Pin 1-6** Current recorder output 1 (pin 1 signal out, pin 6 ground). The output voltage 0 to + 10 Vdc is proportional to the pump current 0 to 10 mA (e.g. 10 Vdc correspond to 10 mA). The resolution is 10 mV minimum (corresponding to 10 µA).

The front panel REC.OUT connector is a duplicate of this signal on a BNC connector.

**Pin 2-6** Current recorder output 2 (pin 2 signal out, pin 6 ground). The output voltage 0 to + 10 Vdc is proportional to the pump current 0 to 1 mA (e.g. 10 Vdc correspond to 1 mA). The resolution is 10 mV minimum (corresponding to 1 µA).

**Pin 4-8** Voltage recorder output (pin 4 signal out, pin 8 ground). The output voltage 0 to 5 V is proportional to the controller high voltage output 0 to 5 kV (e.g. 1 V corresponds to 1 kV in linear mode).

**Pin 5-9** High voltage indication contact. This pure contact (which carries 1 A at 250 Vac and 0.2 A at 30 Vdc) is open when the high voltage is off and closes when the high voltage in on.

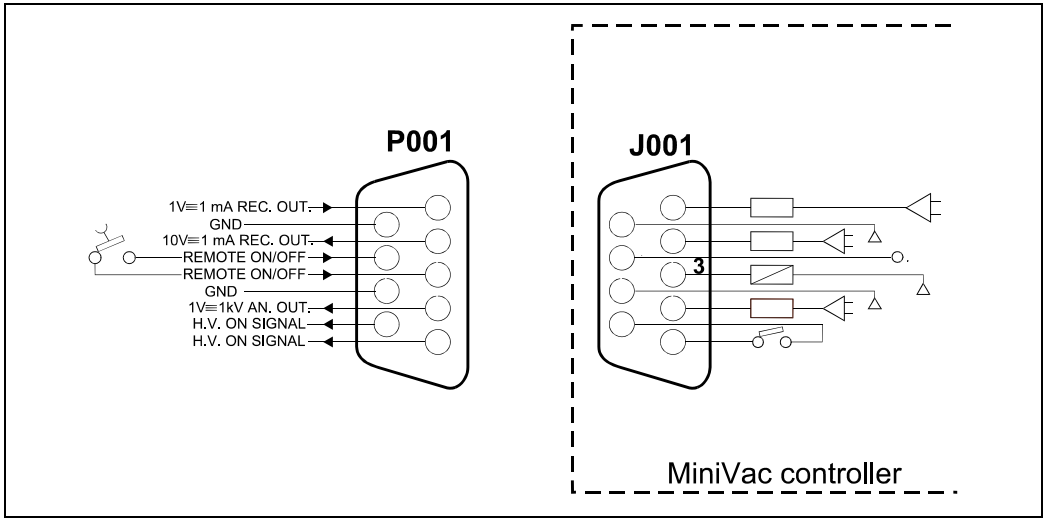


**Figure 10** P001 Mating Connector and J001 Accessory Connector

## Pump Connection

The pump is connected to the controller rear panel via the high voltage connector by a coaxial high voltage cable assembly.

**WARNING!**

- **High voltage can cause severe injury or death.**
  **Before installing or removing the connector:**
  - **Turn the power off.**
  - **When connecting the cable to 2 l/s pumps, or larger, be sure that the ground spring is in place on the high voltage connection of the pump.**
  - **Install the pump connector and secure it with screws.**
  - **Plug the controller connector.**

# Operation

Make all vacuum manifold and electrical connections and refer to the ion pump instruction manual prior to operating the MiniVac controller.

**NOTE** The accessory P001 connector should be left in position including the jumper between pin 3 and 7 if no external connection has been made.

For small ion pumps, up to 8 l/s:

with a roughing pump,
establish a rough pressure suitable to start the ion pump.

For medium ion pump (20 l/s to 60 l/s):
establish a pressure lower than $10^{-5}$ mbar/ Torr.

For large ion pumps (120 l/s to 400 l/s):
establish a pressure lower than 2 x $10^{-6}$ mbar/Torr.

**CAUTION!** Before plugging in the controller power cable, be sure that the selected operating voltage matches the power source to avoid equipment damage.

1. Plug the controller power cable into a suitable power source.
2. Place the ON/OFF switch in the ON position.
3. Monitor the VacIon pump current and the controller high voltage output by watching the LED lit, then read the corresponding current/voltage value (e.g.: if the third LED is increasing its brightness it means that the pump current is between 2 and 3 mA and the high voltage output is between 5 and 4 kV).
4. If only the first LED of the bar graph is lit, the current drawn by the pump is less than 1 mA and the voltage output is 5 kV.
5. If ten LEDs are lit, the current drawn by the pump is 10 mA and the voltage output is 2 kV.
6. For the correct determination of the voltage value, use the voltage vs current diagram shown in the figure “MiniVac Controller Rear Panel Controls”.

## Pressure Determination

Pressure at the inlet flange of a VacIon pump is proportional to the current drawn by the pump.

To determine the pressure of the inlet flange of the VacIon pump, determine the pump current displayed on the front panel or read the recorder output (especially for current lower than 1 mA), and find the corresponding pressure value from the current vs pressure curve of the relevant VacIon pump.

## Power Failure

In the event of a power failure (momentary or long period) the controller is switched off. When power is restored, the controller will automatically restart.

## Remote Control Mode Operation

It is possible to remotely switch onb and off the high voltage using a permanent contact connected to pins 3 and 7 of J001 accessory connector with the mains power ON/OFF switch to ON.

# Maintenance

Replacement controllers are available on advance exchange basis through Agilent service/sales organization.

**WARNING!** **High voltage in the controller can cause severe injury or death. Before servicing, turn power off and remove the power cable.**

## Troubleshooting

**a** No current/voltage LED bar graph lit with mains power ON.

- Verify mains connections and power fuses
- Verify on P001 that pins 3-7 are shorted.

**b** VacIon pump is operating at pressures higher than $1x10^{-5}$ mbar/Torr and only the first LED is lit.

- No high voltage output. Replace the unit.

**c** VacIon pump operating at pressure below $1x10^{-7}$ mbar/Ton and all LED are lit.

- Switch power off and disconnect the high voltage cable.
- Switch power on and verify that only one LED is lit. If this happens the high voltage cable or the pump are shorted.
- If not, replace the unit.

# Controller Spares and Accessories

**Tab. 2**

| Description | Part number |
|---|---|
| Mating accessory connector P001 | 03-648487 |
| Fuse T 2A (5x20 mm) | |
| Rack adapter | 969-9191 |
| Mains cable 120 Vac USA plug | 03-660441-02 |
| Mains cable 220 Vac uropean plug | 03-660441-01 |

# Controller to Vacion Pump Cables

**Tab. 3**

| Description | Part number |
|---|---|
| H.V. bakeable cable, 4 m long to connect 929-0191 or 929-0290 to Star Cell and new VacIon pump series 919 | 929-0770 |
| H.V. cable, 3.5 m long to connect 929-0190 or 929-0291 to Appendage pumps and conventional VacIon pump series 911 and 912 | 924-0741 |
| H.V. bakeable cable, 4 m long to connect 929-0191 or 929-0290 to Appendage and conven-tional VacIon pump series 911 and 912 | 929-0780 |

**Agilent Technologies**

***Vacuum Products Division***

*Dear Customer,*

*Thank you for purchasing an Agilent vacuum product. At Agilent Vacuum Products Division we make every effort to ensure that you will be satisfied with the product and/or service you have purchased.*

*As part of our Continuous Improvement effort, we ask that you report to us any problem you may have had with the purchase or operation of our products. On the back side you find a Corrective Action request form that you may fill out in the first part and return to us.*

*This form is intended to supplement normal lines of communications and to resolve problems that existing systems are not addressing in an adequate or timely manner.*

*Upon receipt of your Corrective Action Request we will determine the Root Cause of the problem and take the necessary actions to eliminate it. You will be contacted by one of our employees who will review the problem with you and update you, with the second part of the same form, on our actions.*

*Your business is very important to us. Please, take the time and let us know how we can improve.*

*Sincerely.*

*Giampaolo LEVI*

*Vice President and General Manager*
*Agilent Vacuum Products Division*

Note: Fax or mail the Customer Request for Action (see backside page) to Agilent Vacuum Products Division (Torino) – Quality Assurance or to your nearest Agilent representative for onward transmission to the same address.

## CUSTOMER REQUEST FOR CORRECTIVE / PREVENTIVE / IMPROVEMENT ACTION

TO: AGILENT VACUUM PRODUCTS DIVISION TORINO – QUALITY ASSURANCE

FAX N°: XXXX-011-9979350

ADDRESS: AGILENT TECHNOLOGIES ITALIA S.p.A. – Vacuum Products Division –

Via F.lli Varian, 54 – 10040 Leinì (TO) – Italy

E-MAIL: vpd-qualityassurance_pdl-ext@agilent.com

| NAME | COMPANY | FUNCTION |
|---|---|---|
| _____ | _____ | _____ |

ADDRESS:

_____

TEL. N° : _____ FAX N° : _____

E-MAIL: _____

PROBLEM / SUGGESTION :

_____

_____

_____

_____

_____

REFERENCE INFORMATION (model n°, serial n°, ordering information, time to failure after installation, etc.):

_____

_____

_____

DATE _____

CORRECTIVE ACTION PLAN / ACTUATION (by AGILENT VPD) LOG N° _____

_____

_____

_____

_____

_____

_____

XXX = Code for dialing Italy from your country (es. 01139 from USA; 00139 from Japan, etc.)

Agilent Technologies

Agilent Technologies

# Vacuum Products Division
# Instructions for returning products

Dear Customer:

Please follow these instructions whenever one of our products needs to be returned.

1) Complete the attached Request for Return form and send it to Agilent Technologies (see below), taking particular care to identify all products that have pumped or been exposed to any toxic or hazardous materials.

2) After evaluating the information, Agilent Technologies will provide you with a Return Authorization (RA) number via email or fax, as requested.
**Note:** Depending on the type of return, a Purchase Order may be required at the time the Request for Return is submitted. We will quote any necessary services (evaluation, repair, special cleaning, eg).

3) **Important steps for the shipment of returning product:**
   - Remove all accessories from the core product (e.g. inlet screens, vent valves).
   - Prior to shipment, drain any oils or other liquids, purge or flush all gasses, and wipe off any excess residue.
   - If ordering an Advance Exchange product, **please use the packaging from the Advance Exchange to return the defective product**.
   - Seal the product in a plastic bag, and package product carefully to avoid damage in transit. You are responsible for loss or damage in transit.
   - Agilent Technologies is not responsible for returning customer provided packaging or containers.
   - **Clearly label package with RA number**. Using the shipping label provided will ensure the proper address and RA number are on the package. Packages shipped to Agilent without a RA clearly written on the outside cannot be accepted and will be returned.

4) Return only products for which the RA was issued.

5) **Product being returned under a RA must be received within 15 business days.**

6) **Ship to the location specified on the printable label, which will be sent, along with the RA number, as soon as we have received all of the required information.** Customer is responsible for freight charges on returning product.

7) Return shipments must comply with all applicable **Shipping Regulations** (IATA, DOT, etc.) and carrier requirements.

RETURN THE COMPLETED **REQUEST FOR RETURN** FORM TO YOUR NEAREST LOCATION:

| **EUROPE:** | **NORTH AMERICA:** | **PACIFIC RIM:** |
|---|---|---|
| Fax: 00 39 011 9979 330<br>Fax Free: 00 800 345 345 00<br>Toll Free: 00 800 234 234 00<br>vpt-customercare@agilent.com | Fax: 1 781 860 9252<br>Toll Free: 800 882 7426, Option 3<br>vpl-ra@agilent.com | please visit our website for individual office information<br>http://www.agilent.com |

Agilent Technologies

**Vacuum Products Division**
**Request for Return Form**
**(Health and Safety Certification)**

Please read important policy information on Page 3 that applies to all returns.

**1) CUSTOMER INFORMATION**

| | |
|---|---|
| **Company Name:** | **Contact Name:** |
| **Tel:** **Email:** | **Fax:** |
| **Customer Ship To:** | **Customer Bill To:** |
| | |
| | |
| | |
| Europe only: **VAT reg. Number:** | USA/Canada only: ☐ **Taxable** ☐ **Non-taxable** |

**2) PRODUCT IDENTIFICATION**

| Product Description | Agilent P/N | Agilent S/N | Original Purchasing Reference |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

**3) TYPE OF RETURN** (**Choose one from each row** and supply Purchase Order if requesting a billable service)

**3A.** ☐ Non-Billable ☐ Billable ➡ New PO # (hard copy must be submitted with this form):

**3B.** ☐ Exchange ☐ Repair ☐ Upgrade ☐ Consignment/Demo ☐ Calibration ☐ Evaluation ☐ Return for Credit

**4) HEALTH and SAFETY CERTIFICATION**

**AGILENT TECHNOLOGIES CANNOT ACCEPT ANY PRODUCTS CONTAMINATED WITH BIOLOGICAL OR EXPLOSIVE HAZARDS, RADIOACTIVE MATERIAL, OR MERCURY AT ITS FACILITY.**
**Call Agilent Technologies to discuss alternatives if this requirement presents a problem.**

**The equipment listed above (check one):**

☐ **HAS NOT** pumped or been exposed to any toxic or hazardous materials. OR

☐ **HAS** pumped or been exposed to the following toxic or hazardous materials. If this box is checked, the following information must also be filled out. Check boxes for all materials to which product(s) pumped or was exposed:

☐ Toxic ☐ Corrosive ☐ Reactive ☐ Flammable ☐ Explosive ☐ Biological ☐ Radioactive

**List all toxic/hazardous materials. Include product name, chemical name, and chemical symbol or formula:**

_____

**NOTE:** If a product is received at Agilent which is contaminated with a toxic or hazardous material that was not disclosed, **the customer will be held responsible** for all costs incurred to ensure the safe handling of the product, and **is liable** for any harm or injury to Agilent employees as well as to any third party occurring as a result of exposure to toxic or hazardous materials present in the product.

**Print Name:** **Authorized Signature: .....** **Date:**

**5) FAILURE INFORMATION:**

| |
|---|
| Failure Mode (REQUIRED FIELD. See next page for suggestions of failure terms): |
| Detailed Description of Malfunction: (Please provide the error message) |
| Application (system and model): |

**I understand and agree to the terms of Section 6, Page 3/3.**
**Print Name:** **Authorized Signature: .....** **Date:**

Agilent Technologies

**Vacuum Products Division**
**Request for Return Form**
**(Health and Safety Certification)**

**Please use these Failure Mode to describe the concern about the product on Page 2.**

**TURBO PUMPS and TURBO CONTROLLERS**

| APPARENT DEFECT/MALFUNCTION | | POSITION | PARAMETERS | |
|---|---|---|---|---|
| - Does not start | - Noise | - Vertical | Power: | Rotational Speed: |
| - Does not spin freely | - Vibrations | -Horizontal | Current: | Inlet Pressure: |
| - Does not reach full speed | -Leak | -Upside-down | Temp 1: | Foreline Pressure: |
| - Mechanical Contact | -Overtemperature | -Other: | Temp 2: | Purge flow: |
| - Cooling defective | -Clogging | ..... | OPERATING TIME: | |

**ION PUMPS/CONTROLLERS**

| | |
|---|---|
| - Bad feedthrough | - Poor vacuum |
| - Vacuum leak | - High voltage problem |
| - Error code on display | - Other |

**VALVES/COMPONENTS**

| | |
|---|---|
| - Main seal leak | - Bellows leak |
| - Solenoid failure | - Damaged flange |
| - Damaged sealing area | -Other |

**LEAK DETECTORS**

| | |
|---|---|
| - Cannot calibrate | -No zero/high backround |
| - Vacuum system unstable | - Cannot reach test mode |
| - Failed to start | - Other |

**INSTRUMENTS**

| | |
|---|---|
| - Gauge tube not working | - Display problem |
| - Communication failure | - Degas not working |
| - Error code on display | - Other |

**SCROLL AND ROTARY VANE PUMPS**

| | |
|---|---|
| - Pump doesn't start | - Noisy pump (describe) |
| - Doesn't reach vacuum | - Over temperature |
| - Pump seized | - Other |

**DIFFUSION PUMPS**

| | |
|---|---|
| - Heater failure | - Electrical problem |
| - Doesn't reach vacuum | - Cooling coil damage |
| - Vacuum leak | - Other |

Section 6) *ADDITIONAL TERMS*

**Please read the terms and conditions below as they apply to all returns and are in addition to the Agilent Technologies Vacuum Product Division – Products and Services Terms of Sale.**

- Customer is responsible for the freight charges for the returning product. Return shipments must comply with all applicable **Shipping Regulations** (IATA, DOT, etc.) and carrier requirements.
- Customers receiving an Advance Exchange product agree to return the defective, rebuildable part to Agilent Technologies **within 15 business days**. Failure to do so, or returning a non-rebuildable part (crashed), will result in an invoice for the non-returned/non-rebuildable part.
- Returns for credit toward the purchase of new or refurbished Products are subject to prior Agilent approval and may incur a restocking fee. Please reference the original purchase order number.
- Units returned for evaluation will be evaluated, and a quote for repair will be issued. If you choose to have the unit repaired, the cost of the evaluation will be deducted from the final repair pricing. A Purchase Order for the final repair price should be issued within 3 weeks of quotation date. Units without a Purchase Order for repair will be returned to the customer, and the evaluation fee will be invoiced.
- A Special Cleaning fee will apply to all exposed products per Section 4 of this document.
- If requesting a calibration service, units must be functionally capable of being calibrated.

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